Pain Assessment via Role-play Internet Simulation (PARIS)

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Abbreviated Abstract

Inadequately treated pain is an important issue for healthcare as patients demand better care and organizations such as the Joint Commission on Accreditation of Healthcare Organizations focus on pain management. Studies indicate significant under-treatment of pain in hospitalized patients, residents of long-term care facilities, and in patients at the end of life. The elderly, young, and minorities are at particular risk. Pain assessment, a critical component of pain management, is a complex ongoing task requiring good patient-provider communication skills, which are difficult to teach. PARIS (Pain Assessment via Role-play Internet Simulation) is an innovative tool that addresses this training need. This tool includes 3 stand-alone skills modules, Fundamentals of Pain Assessment, Pain Assessment with the Elderly, and Pain Assessment with Children. These multimedia tutorials enable learners to interact with virtual patients via voice-recording role-plays and other interactive exercises and include videos of best practice pain assessment. Additional informational modules include Pain Types and Specifications, Pain Pharmacology, and Working with Special Cases. PARIS provides healthcare institutions with a comprehensive program to assist in pain assessment training and can be easily customized to reflect institutions' individual requirements.

Primary Investigator

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Dr. Chabal is one of the founders of Talaria, Inc and currently serves as the Chief Science Officer. He is also an attending physician at the Pain Clinic at Evergreen Hospital in Kirkland, Washington and an associate clinical professor in the Dept. of Anesthesiology at the University of Washington. Previously Dr. Chabal served as the Director of Pain Services at the VA Puget Sound Health Care System in Seattle. Dr. Chabal is the PI for a current SBIR grant: A Device to Enhance TENS Analgesic Effectiveness and serves as the medical advisor on several other Talaria SBIR projects.

Research Team & Affiliations

Ruth Anderson, PhD (former PI), Facet Innovations, Seattle, WA
Kelly Carpenter, PhD and Eileen Van Schaik, PhD, Talaria, Inc

Total Budget

$750,000

Research Objectives

Aim 1: Expand the scope of the Phase I instructional content and create corresponding interactive, facet-based instructional modules. The expanded domain areas will include acute, cancer-related, and chronic non-cancer pain, as well as pain assessment in the elderly, children, non-native speakers and expanded cultural issues, the multidimensional assessment of pain, and special cases (e.g. AIDS, end of life, etc.).

Aim 2: Embellish the learning environment through the addition of videos, as well as more audio and interactive media.

Aim 3: Enhance the software infrastructure: a) automate centralized data analysis, thereby improving user tracking; and b) improve Internet performance and the flexibility and usability of the content authoring environment, thereby facilitating the creation of a CD-ROM version of PARIS.

Aim 4: Conduct ongoing, formative evaluations of the project during development and a summative evaluation at project conclusion. The project trial will compare the effective-ness of PARIS to conventional pain education processes.

Theory/Hypothesis

Healthcare students and providers trained via interactive computerized tutorials will perform as well as those trained with conventional methods.

Experimental Design

The Phase II study was a randomized controlled trial that evaluated the educational effectiveness of the PARIS product versus a videotaped lecture of the same content. Testing of subjects was accomplished using standardized patients and blinded evaluators.

Final Sample Size & Study Demographics

Study participants were nursing students from schools within approximately a 25 mile radius of Seattle. A total of 56 participants completed the Phase II study. As expected, many more participant were females (52, 92.9%), as is representative of the nursing student population. Participant age ranged from 18-52 (Mean = 26.8, SD = 9.1). Thirty-eight (67.9%) participants identified themselves as White, four (7.1%) as Hispanic or Latino, 1 (1.8%) as Black or African American, 1 (1.8%) as American Indian or Alaska Native, 3 (5.4%) as Native Hawaiian or Other Pacific Islander, and 9 (16.1%) as Asian. Thus, 32% of the sample was non-White.

Training and experience: Participants reported both what type of degree they were pursuing and in which year of study they were currently enrolled. Twenty-seven participants (48.2%) reported that they were working toward a B.S.N, 7 (12.5%) toward an L.P.N, and 21 (37.5%) toward an R.N.

Twenty-nine participants (51.8%) reported that they were in their first year of study, 9 (16.1%) in their second, 6 (10.7%) in their third, and 12 (21.4%) in their fourth year of study toward their nursing degree. No participant self-reported extensive training; 24 (42.9%) reported some clinical experience with patients, 7 (12.5%) reported a little experience, and 19 (33.9%) reported no clinical experience with patients.

Data Collection Methods

Participants were randomly assigned to use the Paris Pain Fundamentals module or to view a lecture covering the same material.

Outcome Measures

After completing their pain assessment education, subjects were then tested individually using live professional standardized patients who enacted classic pain scenarios. The professional standardized patients received specific training and practice in the pain scenarios prior to initiation of the study. All subjects were videotaped and the tapes were reviewed and graded using a standardized form by pain experts who were blinded to the subjects' randomization. All subjects also completed multiple choice quizzes and underwent usability and preference testing at the end of the study.

Evaluation Methods

Evaluation methods include standardized patient encounters and written knowledge quizzes as well as satisfaction and usability questionnaires.

Research Results

Subjects as graded by the blinded expert evaluators performed as well using the PARIS software training program as they did after viewing the video of the same instructional content. Subjects in the experimental group (PARIS) significantly preferred the interactive computer program over evaluation of the video content.

Computerized training provided as effective training as the same content delivered via video. However, subjects significantly preferred the PARIS program over the video instruction. No subject had problems using the product or with the computer. The software program offers some significant advantages over in person or video instruction. Pre and post testing and tracking of users is done automatically and area of weakness can be easily identified for each users. The content of the program can be customized and updated easily.

Barriers & Solutions

Each healthcare institution has its own regulations regarding pain assessment and documentation. In order to sell the product, Talaria developed a streamlined customization process to integrate hospitals' unique requirements into the existing product.

Product(s) Developed from This Research

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